

## The Inclination of Saturn's F Ring

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On 21 November 1995, the occultation of the star GSC5249-01240 by Saturn and its rings was observed with the Faint Object Spectrograph on the Hubble Space Telescope (Bosh and Olkin, this conference). The low opening angle ( $B \sim 3^\circ$ ) geometry makes these occultation observations unusually sensitive to inclinations.

We used these data along with previous occultation data (e.g. Harrington *et al.* 1993, *Icarus* **103**, 235) to determine a kinematic model for the F ring. We established a non-zero value for the inclination of the F ring with a  $4\text{-}\sigma$  significance level. This is the first detection of an inclined ring feature in the Saturn system. Although Uranus is known to have narrow and inclined rings, until now we had not observed such rings at Saturn. This detection is an important improvement in the kinematic models of Saturn's F ring, and these models are the basis of dynamical studies.

We will address the implications of the F ring kinematic model on the 1995 Saturn ring-plane crossing observations. In particular, we will examine the role the F ring may play in the observed times of ring-plane crossing for the east and west ring ansae during the May and August events (Bosh and Rivkin 1996, *Science* **272**, 518; Nicholson *et al.* 1996, *Science* **272**, 509).

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